Note: The number of columns may differ for each class depending on the type of Hershey Kisses that are brought in on Monday. You may want to leave the type of Hershey Kiss blank until then.

The Atomic Mass of Candium

Lab # 5

Purpose: To analyze the isotopes of candium and to calculate its atomic mass.
All atoms of the same element do not have the same atomic mass. These atoms are called isotopes. Why do they have a different mass? _____
In this lab activity, you will receive a sample of the element "Candium" but not all of the candium atoms are exactly the same. They are all Candy but they do not all have the same mass. To determine the average "atomic" mass of Candium, the % abundance of each isotope must be known as well as the atomic mass of each isotope.

PreLab Practice problem:
There are two known isotopes of Copper. Copper-63 and Copper-65. What is the average mass of all copper atoms as listed on the periodic table – show all numbers

_____
Do you think there is a greater percentage of Copper-63 or Copper-65 and why?

_____

The atomic mass on the periodic table is the _____of all of the known

_____. This number is determined by multiplying:
(% abundance) (atomic mass) for each isotope and adding that answer for all of the isotopes.

Problem: 69.17 % of all copper atoms have a mass of 62.939 amu
30.83 % of all copper atoms have a mass of 64.927 amu

- Step 1: Change the percent to a decimal
- Step 2: Fill in the chart below

Isotope symbol	Abundance written as a decimal	Mass of isotope	Abundance X mass	answer
			Ave Atomic Mass =	

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Materials:

- sample of candium
- balance

Procedure: Obtain a sample of candium. Separate the five isotopes (plain, caramel, almond, hugs, dark choc) and measure the mass of each group of isotopes. Count the number of plain, caramel, and almond.

		Plain	Caramel	Almond	DC	Hugs	Totals
A	Total mass all particles of this isotope (g)						
B	Number of particles of each isotope	B	B	B	B	B	C
A/B	Average mass of each isotope (g)						
B/C	% abundance (part/whole)						

Isotope symbol	Abundance written as a decimal	Mass of a single isotope	Abundance X mass	answer
Plain				
Dk CH				
Caramel				
Hugs				
Almond				
			Ave Atomic Mass =	

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Analysis:

Using the experimental data, record the answers to the following questions.

1.) Calculate the average mass of each isotope by dividing its total mass by the number of particles of that isotope. (Put into chart)

2.) Calculate the percent abundance of each isotope by dividing its number of particles by the total number of particles and multiplying by 100. (Put into chart)

3.) What is the weighted atomic mass for candium? Calculate the average mass for candium by multiplying the average mass for each isotope by its percent abundance. Add up all numbers.